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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/688,170	10/16/2000	Guido Maurizio Oliva	3572-26	9474

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EXAMINER

LEE, DIANE I

ART UNIT	PAPER NUMBER
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2876

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DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/688,170

Applicant(s)

OLIVA, GUIDO MAURIZIO

Examiner

Diane I. Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-12 and 14-20 is/are rejected.
- 7) ☒ Claim(s) 6 and 13 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Receipt is acknowledged of the Preliminary Amendment filed 6 October 2000. Claims 3-4, 9, 11-12, 14, and 20 have been amended. Currently, claims 1-20 are pending in this application.
2. Receipt is acknowledged of the Request for Corrected Filing Receipt filed 1 February 2001.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.
4. Acknowledgement is made that US 5,627,360 and EP-0524029 references were cited as an "X" references in the search report of the European Patent Application EP 00830488.3 filed 7/11/00.

Drawings

5. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Specification

6. The abstract of the disclosure is objected to because of the followings:
 - (a) Lines 3-4: "comprising means" should be changed to --having a lighting device--;
 - (b) Line 11: "comprises" should be changed to --includes--;
 - (c) Line 12: "said at least" should be changed to --at least--;
 - (d) Line 13: "said reading area" should be changed to --the reading area--;
 - (e) Line 14: "comprises" should be changed to --includes--; and
 - (f) Lines 16-17: "said at least" should be changed to --at least--.

Correction is required. See MPEP § 608.01(b).

7. The disclosure is objected to because of the following informalities:
- (a) Page 2, line 34: Insert --BACKGROUND OF THE INVENTION--;
 - (b) Page 4, line 34: Insert --SUMMARY OF THE INVENTION--;
 - (c) Page 11, line 19: Insert --DESCRIPTION OF THE DRAWINGS--; and
 - (d) Page 12, line 22: Insert --DESCRIPTION OF THE PREFERRED EMBODIMENTS--.

Appropriate correction is required.

Claim Objections

8. Claims 1 and 20 are objected to because of the following informalities:
- (a) Re claim 1, line 1: "the aiming and the visual indication of" should be changed to – aiming and visually indicating--;
 - (b) Re claim 1, line 9: "characterised in that" should be changed to –wherein--; and
 - (c) Re claim 20, lines 1-3: "Optical apparatus for ...according to claim 1" should be changed to –A device according to claim 1, wherein said optical components is an aiming device--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 4-5, 7-9, 11, 16, and 19-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Rudeen [US 5,627,360-cited by the applicant].

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Re claims 1 and 19-20: Rudeen discloses a device providing spotter beams for the aiming and visually indicating a reading area of a coded information reader (see the abstract), comprising:

a laser diode 32 and an LED 50 as a means for emitting a light beam (see figure 5);

an optical element 20A that refracting the light beam as a means for deflecting at least one first portion of the light beam so as to generate at least two different beam portions active on at least two different zones of a reading area of a coded information reader along at least two different optical paths (see col. 3, lines 1+; col. 7, lines 18+, 38+; col. 8, lines 16+; and figures 5, 8, 10, 12);

wherein that said means for deflecting at least one portion of said light beam consists of a refractive optical element 20A (see col. 7, lines 8+ and figures 6A-8, 10-12).

Re claims 4-5 and 16: wherein said refractive optical element 20A comprises first and second opposed faces (lower surface and upper surface 119 of the refractive optical element 20A), respectively for collecting the light beam and projecting the two beam portions (126, 127; 128, 129) on the reading area, wherein an optical axis is defined into the refractive optical element. Said second opposed face 119 comprises two first surfaces portions 122, 124, each one inclined by a predetermined angle with respect to the first face (i.e., the lower surface of 20A) and adapted to deflect a corresponding portion of light beam by a predetermined deflection angle (i.e., the angle defined by the inclined surfaces of 122 and 124) with respect to the optical axis (see col. 7, lines 33+ and figures 7B, 8, 10, 12).

Re claims 7-8: wherein the refractive optical element also comprises a second surface portion (a central portion 120 centrally located in the optical element with respect to the first and the second inclined portions) is for transmitting without any deflection at least one second portion of light beam towards the reading area (see col. 7, lines 7-49; and figures 5, 10-12).

Re claim 9: wherein the second surface portion 120 is substantially flat and parallel to the first face (i.e., lower surface of the optical element 20A) for collecting the light beam (see figure 7B).

Re claim 11: wherein the refractive optical element 20A has a cross section smaller than that of the light beam (see figures 8-9 and 12-13).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rudeen in view of Reddersen et al. [US 5,296,689]. The teachings of Rudeen have been discussed above.

Rudeen teaches the refractive optical element 20A having a central portion 120 extended between the first and the second faces and coaxially formed with respect to the optical axis, wherein the central portion for transmitting the second portion of the light (i.e., laser beam) without any deflection towards the reading area.

Rudeen does not disclose the central portion of the refractive optical element is a through hole and wherein the through hole forming the means for transmitting without any deflection at second portion of light beam towards the reading area.

Reddersen discloses an aiming beam system for optical data reading device having a refractive optical element (a diffractive optical module 20 having a first and a second diffraction surface portions 50a, 50b for deflecting portion of the light beam from the light source 10), wherein the central portion of the refractive optical element 20A is an aperture or a window extended between the first and the second diffraction portion. The central portion (i.e., aperture) transmits the beam without any deflection towards the reading area (see col. 2, lines 38+ and figure 1).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to substitute the refractive optical element of Reddersen with the refractive optical element of Rudeen in order to simplified the optical element of the device. Furthermore, the central portion of the Rudeen appears to have some or minimal beam refraction or focusing when the beam strikes the surface directly (see col. 7, lines 8-17). Therefore, substituting the diffractive optical module of Reddersen would eliminate any possible beam refraction and focusing.

13. Claims 2-3, 12, 14-15, and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rudeen in view of Canini [EP 0 0997 760 A1]. The teachings of Rudeen have been discussed above.

Re claims 2-3, 12, and 14: Although Rudeen teaches that the light source used for a spotter beam is a light-emitting diode (LED 50), he does not disclose the device including a means for collimating the light beam and an amplitude mask adapted to impart a predetermined profile to at least two different beam portions.

Canini discloses an optical device for aiming and visually indicating a reading area having an illuminating assembly comprising an LED as a light beam emitting source, an amplitude mask (a diaphragm 4 having a preset shape or predetermined profile effective to select a portion of the light beam generated by the emitting source) placed downstream of the LED, and a converging lens fixedly placed on the downstream of the amplitude mask adapted to collimate the shaped light beam coming from the amplitude mask and project it onto the reading area (see the abstract; col. 2, lines 1+; col. 7, lines 3+ ; and figure 1). The optical device, located on the optical path downstream of the illuminating assembly, a light deflecting prism 9 which is a refractive optical element (see figure 1).

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to incorporate the illuminating assembly of the Canini having collimating lens and the amplitude mask in the reader of Rudeen in order to prevent the divergent beam the light beam and maintain the

narrow beam intensity before the beam strikes the refractive optical component. Such modification would have provided an accurate beam deflecting result and sharp spotting beam on the reading area.

Re claim 15: Canini discloses that the optical device includes a light deflecting prism 9, which is a refractive optical element, located on downstream of the illuminating assembly of the optical path (see figure 1).

Rudeen as modified Canini does not teach the specific arrangement of the amplitude mask, i.e., it is arranged between the collimating lens and the refractive optical element.

It would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to modify the specific arrangement of the collimating lens and the amplitude mask such that the amplitude mask is arranged between the collimation means and the refractive optical element since both arrangement provides a preset shaped of the of the light beam generated by the emitting source. Accordingly, such modification would have further reduced the diverging effect of the light, and therefore, it would have been an obvious expedient.

Re claim 17: Although the refractive optical element comes in various shapes, Rudeen as modified Canini does not teach other geometric configuration of the optical element.

Since other geometric configuration of the refractive optical element includes (i.e., the cylindrical, convex, spherical lens, and etc., it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to substitute the other geometric configuration of the refractive optical element to provide an equivalent function (i.e., deflecting the light beam). Accordingly, such modification would have been an obvious extension taught by Rudeen as modified by Canini and well within the ordinary skill in the art as taught by Rudeen as modified by Canini.

Re claim 18: Rudeen teaches that the light of the scanning beam which strikes the refractive optical element which obviously teaches that the reshaping process of the scanning beam is arranged upstream of the refractive optical element. Therefore, it would have been an obvious to an artisan of

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ordinary skill in the art at the time the invention was made to incorporate an additional optical component provided upstream of the refractive optical element according to the desired beam modification.

Allowable Subject Matter

14. Claims 6 and 13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

15. The following is a statement of reasons for the indication of allowable subject matter: the best prior art of the record, Rudeen as modified by Reddersen and Canini, fails to teach or fairly suggest the specific structural of the refractive optical element (i.e., the second opposed face having four first surface portions, each one inclined by a predetermined angle with respect to the first face and adapted to deflect a corresponding portion of the light beam and a poly-prismatic structure having a substantially pyramidal shape with a rhomboidal base) and the predetermined deflection angles in relation to first opposed face and the deflecting angles in relation to the optical axis of the first and the second peripheral inclined surface portion, respectively, are different, as set forth in the claims.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Havens et al. [US 6,060,722 A], Batterman et al. [US 5,378,883 A], Meyers [US 5,500,702 A], and Batterman [WO 98/16896] discloses an optical device for aiming and visually indicating a reading area; and


Adachi et al. [US 5,321,717 A] discloses an optical system having a light source, collimated lens, and prism.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Diane I. Lee whose telephone number is 703-306-3427. The examiner can normally be reached on Monday through Friday from 6:30 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael G. Lee can be reached on 703-305-3503. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


Diane I. Lee
Primary Examiner
Art Unit 2876

July 29, 2002